Fertilizer Practice Packet Name: _____

References:

Fertilizer Grade	Fertilizer Name
46-0-0	Urea (dry or liquid)
82-0-0	Anhydrous Ammonia
11-52-0	MAP – Mono-Ammonium Phosphate (Dry)
10-34-0	Liquid Ammonium Polyphosphate
18-46-0	DAP – Di-Ammonium Phosphate (Dry)
0-0-60	Potash (Dry or liquid)
21-0-0-24 (S)	AMS – Ammonium Sulfate

Fertilizer	Price
Anhydrous Ammonia	$598 per ton
Urea	$380 per ton
UAN (28 – 0 – 0)	$215 per 1000 gallons
DAP	$490 per ton
Potash	$378 per ton
MAP (Monoammonium phosphate)	$505 per ton
AMS (Ammonium sulfate)	$350 per ton

How much nutrients are in fertilizer:

1. Jeff has a ton of UAN. How many pounds of nitrogen are in it?

2. How much K20 is in a 75 pound bag of 10 – 20 – 20?

3. Sally has 45 tons of AMS. How much sulfur is in 100 pounds of AMS?

4. Sally has 45 tons of AMS. How much sulfur is in 3 tons of AMS?

5. How much P2O5 is in 4 tons of MAP?

Determining how much fertilizer to apply given nutrients

1. You want 150 pounds on nitrogen applied per acre.
    a. How much anhydrous would you have to apply to hit this goal (lbs)?

    b. How much does this anhydrous cost per acre?

    c. How much urea would you have to apply to hit this goal (lbs)?

    d. How much does this urea cost per acre?

    e. How much DAP would you have to apply to hit this goal (lbs)?

    f. How much does this DAP cost per acre?

2. How much MAP do you have to apply to get 45 pounds of P_2O_5 per acre? How much will it cost for this MAP?

3. You want to put down 55 pounds of sulfur per acre. How much AMS do you apply? How much will it cost for this AMS?

Liquid Fertilizers determining volues – use attached chart on liquid fertilizer densities

1. You want to apply 10 pounds of UAN per acre. How many gallons is this?

2. You want to apply 75 pounds of Liquid Ammonium Polyphosphate per acre. How many gallons is this?

3. You want to apply 30 pounds of nitrogen per acre. How many gallons of UAN should you apply per acre? How much will it cost to apply this to 1000 acres?

4. You want to apply 30 pounds of phosphorus (P_2O_5) per acre. How many gallons of Liquid Ammonium Polyphosphate do you put down per acre?

5. How much nitrogen is in 3000 gallons of UAN?

6. How much P_2O_5 is in 40 gallons of Liquid Ammonium Polyphosphate?

7. You want to apply 30 pounds of nitrogen per acre. How many gallons of UAN plus sulfur (28-0-0-5S) should you apply per acre?

NOTE: Sometimes liquid fertilizer rate should be adjusted on temperature – you will just refigure density

Cost of nutrient in product

1. What is the cost for 1 pound of nitrogen in:
    a. Urea

    b. Anhydrous

2. What is the cost for 1 pound of phosphorus in. Given the price of urea in the above problem.
    a. MAP
        i. Cost of the nitrogen in MAP - find $/ton MAP

        ii. Cost per 1 lb P_2O_5

    b. DAP
        i. Cost of the nitrogen in DAP – find $/ton DAP

        ii. Cost per 1 lb P_2O_5

3. Repeat number two put adjust the prices of MAP to $450/ton and DAP to $400/ton and a urea price of $0.50 per 1 pound of nitrogen
    a. MAP
        i. Cost of the nitrogen in MAP - find $/ton MAP

        ii. Cost per 1 lb P_2O_5

    b. DAP
        i. Cost of the nitrogen in DAP – find $/ton DAP

        ii. Cost per 1 lb P_2O_5

4. How much will it cost you to apply 20 pounds of P_2O_5 per acre on 1000 acres using DAP?

Analysis Questions

1. What is the analysis/grade of a mix of 2000 pounds of urea and 500 pounds of DAP?

2. What is the analysis/grade of a mix of 1000 pounds of urea, 200 pounds of AMS, and 200 pounds of MAP

3. What is the analysis/grade of a mix of 1000 pounds of urea, 200 pounds of potash, 200 pounds of AMS, and 100 pounds of DAP?

Beginning of soil tests – going from nutrient wanted to a blend

1. You want to apply 100 pounds of nitrogen and 20 pounds of P_2O_5 using Urea and DAP. How much of each fertilizer to you blend?

2. You want to apply 120 pounds of nitrogen, 10 pounds of P_2O_5, and 10 pounds of K_2O using Urea, potash, and DAP. How much of each fertilizer to you blend?

3. You want to apply 90 pounds of nitrogen, 15 pounds of P_2O_5, and 10 pounds of sulfur using Urea, AMS, and DAP. How much of each fertilizer to you blend?

4. You want to apply 80 pounds of nitrogen, 9 pounds of P_2O_5, and 9 pounds of K_2O using Urea, potash, and DAP. How much of each fertilizer to you blend?

Analysis to Blend

1. Katherine wants a blend of 34 -0 – 0 – 18 (S). You will blend urea and AMS to get this. She wants 10 tons of the mix. How much of each fertilizer do you blend?

2. Brittney wants to make a blend of 5 – 8 – 8 . She will use Urea potash and MAP. She wants 4 tons of the mix. How much of each fertilizer do you blend for her?

1. $\frac{1 \text{ ton UAN}}{1} \times \frac{2000 \text{ lbs UAN}}{1 \text{ ton UAN}} \times \frac{28 \text{ lbs N}}{100 \text{ lbs UAN}} = \frac{560 \text{ lbs N}}{1}$

2. 

$\frac{75 \text{ lbs 10-20-20}}{1} \times \frac{20 \text{ lbs } K_2O}{100 \text{ lbs 10-20-20}} = \frac{15 \text{ lbs } K_2O}{1}$

3. 45 tons AMS- Not Needed

$\frac{100 \text{ lbs AMS}}{1} \cdot \frac{24 \text{ lbs S}}{100 \text{ lbs AMS}} = \frac{24 \text{ lbs S}}{1}$

4. $\frac{3 \text{ ton AMS}}{1} \times \frac{2000 \text{ lbs AMS}}{1 \text{ ton AMS}} \times \frac{24 \text{ lbs S}}{100 \text{ lbs AMS}} = \frac{1440 \text{ lbs S}}{1}$

5. $\frac{4 \text{ tons MAP}}{1} \times \frac{2000 \text{ lbs MAP}}{1 \text{ ton MAP}} \times \frac{52 \text{ lbs } P_2O_5}{100 \text{ lbs MAP}} = 4160 \text{ lbs } P_2O_5$

82-00 1a. $\frac{150 \text{ lbs N}}{1 \text{ acre}} \cdot \frac{100 \text{ lbs AA}}{82 \text{ lbs N}} = \boxed{\frac{\text{lbs AA}}{1 \text{ acre}} \quad 182.9}$

b. $\frac{182.9 \text{ lbs AA}}{1 \text{ acre}} \times \frac{1 \text{ ton AA}}{2000 \text{ lbs AA}} \times \frac{\$598}{1 \text{ ton AA}} = \boxed{\frac{\$ 54.69}{1 \text{ acre}}}$

c. $\frac{150 \text{ lbs N}}{1 \text{ acre}} \cdot \frac{100 \text{ lbs urea}}{46 \text{ lbs N}} = \boxed{\frac{326.08 \text{ lbs urea}}{1 \text{ acre}}}$

d. $\frac{326 \text{ lbs urea}}{1 \text{ acre}} \times \frac{1 \text{ ton urea}}{2000 \text{ lbs urea}} \times \frac{\$380}{1 \text{ ton urea}} = \boxed{\frac{\$61.94}{1 \text{ acre}}}$

e. $\frac{150 \text{ lbs N}}{1 \text{ acre}} \cdot \frac{100 \text{ lbs DAP}}{18 \text{ lbs N}} = \boxed{\frac{833.3 \text{ lbs DAP}}{1 \text{ acre}}}$

f. $\frac{833.3 \text{ lbs DAP}}{1 \text{ acre}} \times \frac{1 \text{ ton DAP}}{2000 \text{ lbs DAP}} \times \frac{\$490}{1 \text{ ton DAP}} = \boxed{\frac{\$204.17}{1 \text{ acre}}}$

2. $\frac{45 \text{ lbs } P_2O_5}{1 \text{ acre}} \times \frac{100 \text{ lbs MAP}}{52 \text{ lbs } P_2O_5} = \boxed{\frac{86.5 \text{ lbs MAP}}{1 \text{ acre}}}$

$\frac{86.5 \text{ lbs MAP}}{1 \text{ acre}} \times \frac{1 \text{ ton MAP}}{2000 \text{ lbs MAP}} \times \frac{\$505}{1 \text{ ton MAP}} = \boxed{\frac{\$21.85}{1 \text{ acre}}}$

3. $\frac{55 \text{ lbs S}}{1 \text{ acre}} \times \frac{100 \text{ lbs AMS}}{24 \text{ lbs S}} = \boxed{\frac{229.17 \text{ lbs AMS}}{1 \text{ acre}}}$

$\frac{229.17 \text{ lbs AMS}}{1 \text{ acre}} \times \frac{1 \text{ ton AMS}}{2000 \text{ lbs AMS}} \times \frac{\$350}{1 \text{ ton AMS}} = \boxed{\frac{\$40.10}{1 \text{ acre}}}$

Liquid

1. $\frac{10 \text{ lbs}}{1 \text{ acre}} \times \frac{1 \text{ gal UAN}}{10.6 \text{ lbs UAN}} = \frac{\text{gal UAN}}{1 \text{ acre}} = \boxed{0.943 \frac{\text{gal UAN}}{1 \text{ acre}}}$

2. $\frac{75 \text{ lbs LAP}}{1 \text{ acre}} \times \frac{1 \text{ gal LAP}}{11.65 \text{ lbs LAP}} = \boxed{\frac{6.437 \text{ gal LAP}}{1 \text{ acre}}}$

3. $\frac{30 \text{ lbs N}}{1 \text{ acre}} \times \frac{100 \text{ lbs UAN}}{28 \text{ lbs N}} \times \frac{1 \text{ gal UAN}}{10.6 \text{ lbs UAN}} = \boxed{\frac{10.1 \text{ gal UAN}}{1 \text{ acre}}}$ 10-34-0

$\frac{\$215}{1000 \text{ gal UAN}} \times \frac{10.1 \text{ gal UAN}}{1 \text{ acre}} \times \frac{1000 \text{ acres}}{1} = \boxed{\$2171.50}$

4. $\frac{30 \text{ lbs } P_2O_5}{1 \text{ acre}} \times \frac{100 \text{ lbs } 10\text{-}34}{34 \text{ lbs } P_2O_5} \times \frac{1 \text{ gal } 10\text{-}34}{11.65 \text{ lbs } 10\text{-}34} = \frac{\text{gal } 10\text{-}34}{1 \text{ acre}}$

$\boxed{\frac{7.57 \text{ gal } 10\text{-}34\text{-}0}{1 \text{ acre}}}$

5. $\frac{3000 \text{ gal UAN}}{1} \times \frac{10.6 \text{ lbs UAN}}{1 \text{ gal UAN}} \times \frac{28 \text{ lbs N}}{100 \text{ lbs UAN}} = \boxed{\frac{8904 \text{ lbs N}}{1}}$

6. $\frac{40 \text{ gal AP}}{1} \times \frac{11.65 \text{ lbs AP}}{1 \text{ gal AP}} \times \frac{34 \text{ lbs } P_2O_5}{100 \text{ lbs AP}} = \boxed{\frac{158.44 \text{ lbs } P_2O_5}{1}}$

7. $\frac{30 \text{ lbs N}}{1 \text{ acre}} \times \frac{100 \text{ lbs UAN}}{28 \text{ lbs N}} \times \frac{1 \text{ gal UAN-S}}{10.76 \text{ lbs UAN}} = \boxed{\frac{9.96 \text{ gal UAN}}{1 \text{ acre}}}$

cost nutrient

1. $\frac{\$380}{1\ ton\ UAN} \times \frac{1\ ton\ UAN}{2000\ lbs\ UAN} \times \frac{100\ lbs\ UAN}{46\ lbs\ N} = \boxed{\frac{\$0.413}{1\ lb\ N}}$

A.

B. $\frac{\$598}{1\ ton\ A.} \times \frac{1\ ton\ A}{2000\ lbs\ A} \times \frac{100\ lbs\ A}{82\ lbs\ N} = \boxed{\frac{\$0.364}{1\ lb\ N}}$

2. $\frac{A.\ 2000\ lbs\ Map}{1\ ton\ Map} \times \frac{11\ lbs\ N}{100\ lbs\ MAP} \times \frac{\$0.413}{1\ lb\ N} = \frac{\$90.86}{1\ ton\ MAP}$

i.

B. $\frac{2000\ lbs\ DAP}{1\ ton\ DAP} \times \frac{18\ lbs\ N}{100\ lbs\ DAP} \times \frac{\$0.413}{1\ lb\ N} = \frac{\$148.68}{1\ ton\ DAP}$

i.

2a ii $\frac{\$505}{1 \text{ ton map}} - \frac{\$90.86}{1 \text{ ton Map}} = \frac{\$414.14}{1 \text{ ton Map}}$

$\frac{1 \text{ ton MAP}}{2000 \text{ lbs MAP}} \times \frac{100 \text{ lbs MAP}}{52 \text{ lbs } P_2O_5} \times \frac{\$414.14}{1 \text{ ton map}} = \frac{\$0.40}{\text{lbs } P_2O_5}$

2bii $\frac{\$490}{1 \text{ ton DAP}} - \frac{\$148.68}{1 \text{ ton DAP}} = \frac{\$341.32}{1 \text{ ton DAP}}$

$\frac{100 \text{ lbs DAP}}{46 \text{ lbs } P_2O_5} \times \frac{1 \text{ ton DAP}}{2000 \text{ lbs DAP}} \times \frac{\$341.32}{1 \text{ ton DAP}} = \boxed{\frac{\$0.37}{16 \ P_2O_5}}$

3 ai $\frac{2000 \text{ lbs MAP}}{1 \text{ ton MAP}} \cdot \frac{11 \text{ lbs N}}{100 \text{ lbs MAP}} \cdot \frac{\$50}{116 \text{ N}} = \frac{\$110}{\text{ton MAP}}$

ii $\$450 - \$110 = \$340$

$\frac{\$340}{1 \text{ ton MAP}} \cdot \frac{1 \text{ ton MAP}}{2000 \text{ lbs MAP}} \cdot \frac{100 \text{ lbs MAP}}{52 \text{ lbs } P_2O_5} = \boxed{\frac{\$0.33}{16 \ P_2O_5}}$

b. i $\frac{2000 \text{ lbs DAP}}{1 \text{ ton DAP}} \cdot \frac{18 \text{ lbs N}}{100 \text{ lbs DAP}} \cdot \frac{\$.50}{116 \text{ N}} = \frac{\$180}{\text{ton DAP}}$

ii $\$400 - \$180 = \$220$

$\frac{\$220}{1 \text{ ton DAP}} \cdot \frac{1 \text{ ton DAP}}{2000 \text{ lbs DAP}} \cdot \frac{100 \text{ lbs DAP}}{46 \text{ lbs } P_2O_5} = \boxed{\frac{\$0.239}{16 \ P_2O_5}}$

4. $\frac{\$490}{1\text{ ton DAP}} \times \frac{1\text{ ton DAP}}{2000\text{ lbs DAP}} \times \frac{100\text{ lbs DAP}}{46\text{ lbs } P_2O_5} \cdot \frac{2016\text{s } P_2O_5}{1\text{ acre}} \times \frac{\$1000\text{ acres}}{1} =$

$\frac{\$10652.17}{1}$

Analysis

	weight	N	P	K
1. urea	2000	920	-	-
DAP	500	90	230	-
total	2500 lbs	1010	230	0

$920 = \frac{2000\text{ lbs urea}}{1} \times \frac{46\text{ lbs N}}{100\text{ lbs urea}}$

$90 = \frac{2000\text{ lbs DAP}}{1} \times \frac{18\text{ lbs } P_2O_5}{100\text{ lbs DAP}}$

New totals

N	P	K
1010	230	0
2500	2500	
0.404	0.092	

$230 = \frac{2000\text{ lbs DAP}}{1} \times \frac{46\text{ lbs } P_2O_5}{100\text{ lbs DAP}}$

40 - 9 - 0

2.

	lbs	N	P	K	S
urea	1,000	460	–	–	–
AMS	200	42	–	–	48
MAP	200	22	104	–	–
total	1400	524	104	–	48

work

$\frac{1000 \text{ lbs urea}}{1} \times \frac{46 \text{ lbs N}}{100 \text{ lbs urea}}$

$\frac{200 \text{ lbs AMS}}{1} \times \frac{21 \text{ lbs N}}{100 \text{ lbs AMS}}$

$\frac{200 \text{ lbs AMS}}{1} \times \frac{24 \text{ lbs S}}{100 \text{ lbs AMS}}$

N	P	K	S
$\frac{524}{1400}$	$\frac{104}{1400}$	0	$\frac{48}{1400}$

$\frac{200 \text{ lbs MAP}}{1} \times \frac{11 \text{ lbs N}}{100 \text{ lbs MAP}}$

$\frac{200 \text{ lbs MAP}}{1} \times \frac{52 \text{ lbs } P_2O_5}{100 \text{ lbs MAP}}$

.37 .07 .03

37 - 7 - 0 - 3

3.

	lbs	N	P	K	S	
urea	1000	460	-	-	-	work see #2
potash	200	-	-	120	-	$\frac{200\text{lbs pot}}{1} \times \frac{60\text{lbs } K_2O}{100\text{lbs pot}}$
AMS	200	42	0	0	48	work see #2
DAP	100	18	46	-	-	$\frac{100\text{lbs DAP}}{1} \times \frac{18\text{lbs N}}{100\text{lbs DAP}}$
	1500	520	46	120	48	

N	P	K	S
$\frac{520}{1500}$	$\frac{46}{1500}$	$\frac{120}{1500}$	$\frac{48}{1500}$
.346	.03	.08	.03

$\frac{100\text{lbs DAP}}{1} \times \frac{46\text{ lbs } P_2O_5}{100\text{lbs DAP}}$

34 - 3 - 8 - 3

Begin Soil Test

1. A. Start w/ right N-P-K-S

Start w/ P - How much DAP?

$$\frac{20 \text{ lbs } P_2O_5}{1} \times \frac{100 \text{ lbs DAP}}{46 \text{ lbs } P_2O_5} = 44 \text{ lbs DAP}$$

B. How much N is in DAP?

$$\frac{44 \text{ lbs DAP}}{1} \times \frac{18 \text{ lbs N}}{100 \text{ lbs DAP}} = 7.92 \text{ lbs N}$$

C. How much N Need?

$$100 \text{ lbs} - 7.92 \text{ lbs N} = 92.08 \text{ lbs N}$$

D. How much Urea?

$$\frac{92.08 \text{ lbs N}}{1} \times \frac{100 \text{ lbs Urea}}{46 \text{ lbs N}} = 201 \text{ lbs Urea}$$

201 lbs Urea + 44 lbs DAP

2. A. Start on Right N P K

How much Potash need?

$$\frac{10 \text{ lbs } K_2O}{1} \times \frac{100 \text{ lbs Potash}}{60 \text{ lbs } K_2O} = \boxed{17 \text{ lbs Potash}}$$

B. Next is P_2O_5 - How much DAP?

$$\frac{10 \text{ lbs } P_2O_5}{1} \times \frac{100 \text{ lbs DAP}}{46 \text{ lbs } P_2O_5} = \boxed{22 \text{ lbs DAP}}$$

C. How much N is in DAP?

$$\frac{22 \text{ lbs DAP}}{1} \times \frac{18 \text{ lbs N}}{100 \text{ lbs DAP}} = 3.96 \text{ lbs N}$$

D. How much [redacted] N need?

$$120 \text{ lbs N} - 3.96 \text{ lbs N} = 116.04 \text{ lbs N}$$

E. How much urea

$$\frac{116.04 \text{ lbs N}}{1} \times \frac{100 \text{ lbs urea}}{46 \text{ lbs N}} = \boxed{253 \text{ lbs urea}}$$

3. Right NPKS so S

A How much sulfur → AMS

$$\frac{10 \text{ lbs S}}{1} \times \frac{100 \text{ lbs AMS}}{24 \text{ lbs S}} = \boxed{42 \text{ lbs AMS}}$$

B. How much N in AMS

$$\frac{42 \text{ lbs AMS}}{1} \times \frac{21 \text{ lbs N}}{100 \text{ lbs AMS}} = 8.75 \text{ lbs N}$$

C. How much DAP? P

$$\frac{15 \text{ lbs } P_2O_5}{1} \times \frac{100 \text{ lbs DAP}}{46 \text{ lbs } P_2O_5} = \boxed{33 \text{ lbs DAP}}$$

D. How much N in DAP

$$\frac{33 \text{ lbs DAP}}{1} \times \frac{18 \text{ lbs N}}{100 \text{ lbs DAP}} = 5.94 \text{ lbs N}$$

E. How much N?

$$90 - 8.75 - 5.94 = 75.31 \text{ lbs N}$$

F. How much urea?

$$\frac{75.31 \text{ lbs N}}{1} \times \frac{100 \text{ lbs urea}}{46 \text{ lbs N}} = \boxed{164 \text{ lbs urea}}$$

4. A start @ right NPK 50K

How much Potash?

$$\frac{9 \text{ lbs } K_2O}{1} \times \frac{100 \text{ lbs Pot osh}}{60 \text{ lbs } K_2O} = \boxed{15 \text{ lbs Potash}}$$

B. Now How much DAP

$$\frac{9 \text{ lbs } P_2O_5}{1} \times \frac{100 \text{ lbs DAP}}{46 \text{ lbs } P_2O_5} = \boxed{20 \text{ lbs DAP}}$$

C. How much N in DAP?

$$\frac{20 \text{ lbs DAP}}{1} \times \frac{18 \text{ lbs N}}{100 \text{ lbs DAP}} = 3.6 \text{ lbs N}$$

D. How much N?

$80 - 3.6 = 76.4$ lbs N

E. How much urea?

$$\frac{76.4 \text{ lbs N}}{1} \times \frac{100 \text{ lbs urea}}{42 \text{ lbs N}} = \boxed{167 \text{ lbs Urea}}$$

1. ASTART Nutrient Furthest right - How much do you need?

$$\frac{10 \text{ tons Blend}}{1} \times \frac{2000 \text{ tons Blend}}{1 \text{ ton blend}} \times \frac{18 \text{ lbs S}}{100 \text{ lbs Blend}} = \frac{3600 \text{ lbs S}}{1}$$

B. Next How much AMS gives us this?

$$\frac{3600 \text{ lbs S}}{1} \times \frac{100 \text{ lbs AMS}}{24 \text{ lbs}} = \frac{15{,}000 \text{ lbs AMS}}{1}$$

C. How Much other stuff is in AMS - N

$$\frac{15{,}000 \text{ lbs AMS}}{1} \times \frac{21 \text{ lbs N}}{100 \text{ lbs AMS}} = \frac{3150 \text{ lbs N}}{1}$$

D. How much N Do we need?

$$\frac{10 \text{ ton blend}}{1} \times \frac{2000 \text{ tons blend}}{1 \text{ ton blend}} \times \frac{34 \text{ lbs N}}{100 \text{ lbs Blend}} = 6800 \text{ lbs N}$$

1. e. How Much More N do we need?

6800 lbs N − 3150 lbs N = 3650 lbs N
(D) (C)

f. How much urea do we need?

$$\frac{3650 \text{ lbs N}}{1} \times \frac{100 \text{ lbs Urea}}{\frac{46 \text{ lbs}}{N}} = 7935 \text{ lbs urea}$$

So I will Blend

7935 lbs urea + 15000 lbs AMS

Analysis to Blend #2 5-8-8 w/ urea & MAP Potash

A. Start @ righ

$$\frac{4 \text{ tons Blend}}{1} \times \frac{2000 \text{ lbs Blend}}{1 \text{ ton Blend}} \times \frac{8 \text{ lbs } K_2O}{100 \text{ lbs Blend}} = \frac{640 \text{ lbs } K_2O}{1}$$

B. Find How much Potash need K_2O

$$\frac{640 \text{ lbs } K_2O}{1} \times \frac{100 \text{ lbs Potash}}{60 \text{ lbs } K_2O} = \frac{1067 \text{ lbs Potash}}{\text{-}} \star$$

C. No other stuff in potash move to P_2O_5

$$\frac{4 \text{ tons Blend}}{1} \times \frac{2000 \text{ lbs Blend}}{1 \text{ ton Blend}} \times \frac{8 \text{ lbs } P_2O_5}{100 \text{ lbs Blend}} = \frac{640 \text{ lbs } P_2O_5}{1}$$

D. How much MAP need for P_2O_5?

$$\frac{640 \text{ lbs } P_2O_5}{1} \times \frac{100 \text{ lbs MAP}}{52 \text{ lbs } P_2O_5} = \frac{1231 \text{ lbs MAP}}{} \star$$

E. How much N is in MAP?

$$\frac{1231 \text{ lbs Map}}{1} \times \frac{11 \text{ lbs N}}{100 \text{ lbs Map}} = 135.4 \text{ lbs N}$$

F. How much N?

$$\frac{4 \text{ tons blend}}{1} \times \frac{2000 \text{ lbs Blend}}{1 \text{ ton Blend}} \times \frac{5 \text{ lbs N}}{100 \text{ lbs Blend}} = 400 \text{ lbs N}$$

6. How Much N still Need?

$$400 - 135.4 = 264.6 \text{ lbs N}$$
$$(F) \quad (E)$$

H. How much Urea Need?

$$\frac{264.6 \text{ lbs N}}{1} \times \frac{100 \text{ lbs urea}}{46 \text{ lbs N}} = 576 \text{ lbs urea}^{*}$$

Blend		
576 lbs Urea	1231 lbs MAP	1067 lbs Potash